**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**9th grade physics practice problem set – Charge, Current, Voltage, Resistance, Power, Cost**

**Instruction: Complete the following problems, showing all equations, units, and calculations.**

**\*\*\*\*\* Remember to review the ppts on the wiki for formulas and understanding**

1) A rubber balloon has become negatively charged from being rubbed with a wool cloth, and the charge is measured as 1.00 x 10-14 C. According to this charge, the balloon contains an excess of how many electrons?

2) An electric current through a wire is 8.00 C every 4.00 s. What is the magnitude of this current?

3) A current of 6.00 A flows through a device connected to a 120.0 V circuit. What is the resistance of the device?

4) What is the current in a 30.0 Ω resistor when the potential difference across it is 120.0 V?

5) A small radio operates on 3.00 V and has a resistance of 15.0 Ω. At what rate does the radio use electric energy?

6) A 1,100 W hair dryer is designed to operate on 120 V. How much current does this dryer require?

7) An electric fan is designed to draw 0.5 A in a 120 V circuit. What is the power rating of the fan?

8) A 1,200 W hair dryer is operated on a 120 V circuit for 15 min. If electricity costs $0.10/kWh, what was the cost of using the blow dryer?

9) An electric fan draws 0.5 A in a 120 V circuit. What is the cost of operating the fan if the rate is $0.10/kWh?

10) What is the cost of operating a 100 W lightbulb for 1.00 h if the utility rate is $0.10 per kWH?